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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,748	08/30/2001	Hiroki Nakahara	9319S-000262	8473

27572 7590 09/02/2003

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EXAMINER	
RAO, SHRINIVAS H	

ART UNIT	PAPER NUMBER
2814	

DATE MAILED: 09/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/943,748	NAKAHARA ET AL.	
	Examiner	Art Unit	
	Steven H. Rao	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 to 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6 & 7* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Response to Amendment

Applicants' amendment filed on June 27, 2003 has been entered on July 03, 2003.

Therefore claims 1 to 12 as originally filed and claim 13 –18 presently newly added are currently pending in the Application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 6,8 to 10, 12, 13, 15 –18 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPR (Applicants' admitted Prior Art shown at least in figure 8 and specification pages 2 and 3, hereinafter AAPR) and further in view of Masaki et al. (U.S. Patent No. 6,271,907, herein after Masaki).

The same rejection as previously stated for claims 1 to 12 is reproduced below for ready reference and for response to Applicants' Arguments see – response to arguments section below.

With respect to claim 1, AAPR describes a method of manufacturing a liquid crystal display having a liquid crystal panel with a liquid crystal sealed in liquid crystal

sealing-in areas disposed between a air of substrates comprising the steps of: a liquid crystal injecting step of injecting a liquid crystal from a liquid crystal injection port into said liquid crystal sealing-in areas. (AAPR fig. 8), an end-sealing material applying step of applying an uncured end-sealing material to said liquid crystal injection port after injecting the liquid crystal. (AAPR fig. 8), an end sealing removal step of removing at least part of said end-sealing material bleeding outside a contour of said liquid crystal panel (AAPR fig. 8).

AAPR does not specifically describe an end sealing material curing step of curing said end-sealing material after said end-sealing material removing step.

However, Masaki, in col. 8 lines 25-30 describes an end sealing material curing step of curing said end-sealing material after said end-sealing material removing step to avoid any interaction between the extra sealant present and the liquid crystal material.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to Include Masaki's curing step after the removal In AAPR's method to avoid any interaction between the extra sealant present and the liquid crystal material.

With respect to claim 2, AAPR does not specifically describe wherein said end-sealing material removing step includes a step of absorbing said end-sealing material by bringing an absorbent material in contact with said end-sealing material and absorbing said end-sealing material by said absorbent material. (Masaki col. 11 lines 14-15, Masaki col.6 and figs. 11A and 11 B).

With respect to claim 6, wherein the AAPR describes a method of manufacturing a liquid crystal display having a liquid crystal panel with a liquid crystal sealed in liquid

crystal sealing-in areas disposed between a air of substrates comprising the steps of: a liquid crystal injecting step of injecting a liquid crystal from a liquid crystal injection port into said liquid crystal sealing-in areas. (AAPR fig. 8), an end-sealing material applying step of applying an uncured end-sealing material to said liquid crystal injection port after injecting the liquid crystal. (AAPR fig. 8).

AAPR does not specifically describe the step of " a wiping step of wiping at least a part of said end-sealing material bleeding outside of the contour of said liquid crystal panel by a wiping jig.

However, However Masaki in col. 11 lines 14-15 describes wiping off the excess material with a cotton swab to remove only the excess material and without removing any other material like flattening film and /or color filters during the wiping and absorbing operations.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Masaki's step of wiping with absorbing material in AAPR's method to remove only the excess material and without removing any other material like flattening film and /or color filters during the wiping and absorbing operations. (Masaki col.6 and figs. 11A and 11 B).

The last remaining step of claim 6, namely an end-sealing material curing step of curing said end-sealing material after said wiping step. (Masaki col. 11 lines 14-15).

Further it is well settled law that selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. (In re

Bruhuas, 154 F.2d 690, 69 USPQ 330 (CCPA 1946), see also Ex parte Rubin 126 USPQ 440 (BAPI 1959).

Claim 8 repeats the steps of claims 1 and 4.

With respect to claim 9 repeats the steps of claims 1 and 4.

With respect to claim 10, it repeats the steps of claims 1,4 and 8 and is rejected for reasons stated above

With respect to claim 12, it repeats the steps of claims 1 and 4 and is rejected for reasons stated above.

With respect to claim 13, it repeats the steps of claim 2 and recites, " pressing an absorbent material against said end-sealing means " instead of " bringing an absorbent material into contact with said end-sealing material". (Masaki col. 6 and figs. 11 A and B,).

With claim 15 it repeats the steps of claims 1 and 2 above and is rejected for the same reasons

With respect to claims 16- 18 they recite wherein said liquid crystal injection port is opened in an end face of said liquid crystal panel. (AAPR- spécification page 2, lines 1-5, etc.).

B. Claims 3 to 5, 7, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPR (Applicants' admitted Prior Art shown at least in figure 8 and specification pages 2 and 3, hereinafter AAPR) and Masaki et al. (U.S. Patent No. 6,271,907, herein after Masaki) as applied to claims1-2 above and further in view of Forlini et al. (U.S. Patent No. 3,744,126, herein after Forilini).

With respect to claim 3, wherein said end-sealing material removing step includes a step of sucking said end-sealing material by bringing a suction jig into contact with said end-sealing material and sucking said end-sealing material into said sucking jig.

With respect to claim 4, wherein the end-sealing material removing step further includes a step of toweling off said end –sealing material along an end face of said liquid crystal panel where said liquid crystal injection port is arranged by a toweling jig after sucking said end-sealing material by said suction jig. (Forilini col.4 lines 22-23).

With respect to claim 5, wherein a step of increasing a pressure inside said liquid crystal sealing-in areas of said liquid crystal panel before said liquid crystal injecting step and a step of evacuating said liquid crystal sealing-in areas after said end-sealing material applying step and before said end-sealing material removing step. (Forilini col. 4 lines 39-40).

With respect to claim 7, wherein the step of increasing a pressure inside said liquid crystal sealing-in areas of said liquid crystal panel before said liquid crystal injecting step and a step of evacuating said liquid crystal sealing-in areas after said end-sealing material applying step before said end-sealing material wiping step. (Forilini col. 4 lines 39-40).

With respect to claim 11, it repeats the steps of claims 1 and 6 and is rejected for reasons stated above.

With respect to claim 14, it repeats the steps of claims 1 and 3 and is rejected for the same reasons as those stated above.

Response to Arguments

Applicant's arguments filed on July 03, 2003 have been fully considered but they are not persuasive for the following reasons:

Applicants' first contention that Masaki does not describe the step of removing at least a part of the end-sealing material bleeding outside a contour of the liquid crystal is not persuasive because Masaki in col. 8 lines 14 to 34 states:

> The thus prepared pair of scanning-side and data-side substrates **54** and **30** was washed with pure water and dried.
>
> On the data-side substrate **30**, a sealing agent **7** (59 in FIG. 5) ("Struct Bond", mfd. by Mitsui Toatsu K.K.) was disposed at the periphery thereof in a rectangular (frame-shaped) pattern so as to leave a liquid crystal injection port **8** shown in FIG. **1**, and 1.2 μm-dia. SiO_2 spacer beads **60** ("Silica Microbeads", mfd. by Shokubai Kasei Kogyo K.K.) were dispersed at a density of 300 (particles)/mm^2.
>
> Then, the scanning-side substrate **54** and the data-side substrate **30** were applied to each other so that rubbing directions of the substrates were parallel and identical to each other and the scanning electrodes **55** and the data electrodes **34** intersect each other to form an electrode matrix under a pressure of 3 kg/cm^2 at 170° C. for 4 hours, thus curing the sealing agent **59** (**7**). The liquid crystal injection port **8** was located on one of mutually opposite (two) side parallel to the data electrodes (stripe-shaped lines) **34** of the data-side substrate **4**. In the vicinity of the liquid crystal injection port **8**, the (blank) cell was scribed and cut in a shape as shown in FIGS. **6**A and **6**B by using a carbide wheel cutter (cutting tool).

and figure 11 shows :

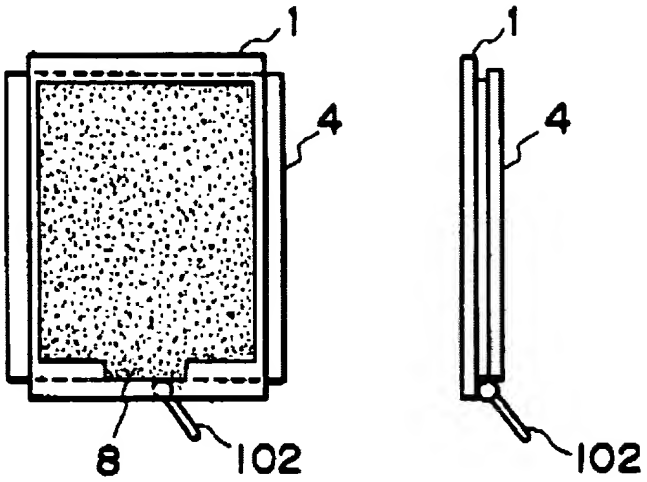

FIG. 11

Therefore excess sealing agent 59(7) (which is placed between the substrates 54 and 30 (also see in figure 5) has only port 8 as exit and is removed along with any excess liquid crystal from port 8 while the excess and liquid crystal and excess sealing agent (that has exited from only available port 8) are removed by cutting with the carbide wheel cutter.

Therefore there is motivation in Masaki to combine it with AAPR.

Applicants' next contention that APR and Masaki do not teach the removal of end sealing material before it has been cured is not persuasive for the same reasons as stated in the previous rejection , namely Further it is well settled law that selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. (In re Bruhuas, 154 F.2d 690, 69 USPQ 330 (CCPA 1946), see also Ex parte Rubin 126 USPQ 440 (BAPI 1959).

Further Applicants' contention that the claimed method provides *inherent* and *implicit* advantages is not persuasive because , " by removing material prior to curing

..it becomes easier to position other elements such as polarizers onto the substrate because there is no excess sealing material present and the liquid crystal panel may be more easily positioned within a case body" is not persuasive . Further it is noted that because claim 1 recites removing the end sealing material before curing and claim 6 recites removing the end sealing material after curing it is not understood how the claimed method provides inherent and implicit advantages that are found in removing material only prior to curing.

Applicants' repeat the same arguments stated above with respect to claims 8, 10, 12 and 3 to 5, 7 and 11 and the arguments are not persuasive for reasons stated above.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Steven H. Rao whose telephone number is (703) 306-5584. The examiner can normally be reached on Monday- Friday from approximately 7:00 a.m. to 5:30 p.m.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956. The Group facsimile number is (703) 308-7724.

Steven H. Rao

Patent Examiner.

August 25, 2003.

SUPERVISORY PRIMARY EXAMINER
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